



Material Selection

TIVAR UHMW Product Specifications

Property*	Units	Test Method**	TIVAR 1000	TIVAR Marble/Uniblend	TIVAR 1000 AntiStatic	TIVAR DrySlide	Ceram P	TIVAR Oil Filled
DENSITY	GR/CC	ASTM D-792	0.93	.935 - .945	0.93	0.93	0.964	0.928
TENSILE PROPERTIES		ASTM D-438						
Yield Strength	PSI		9050	2800 - 3553	3000	2770	2800	2600
Tensile at Break	PSI		5800	3600 - 5200	4000	4815	3800	6527
Elongation at Break	PERCENT		200	50 - 350	140	200	300	280
TENSILE MODULUS	PSI	ASTM D-438	120,000	90,100 - 127,500	156,900	118,643	130,970	76,000
FLEXURAL MODULUS (1% SAMP)	PSI	ASTM D-7908	110,000	86,000 - 101,000	100,000	104,459	99,933	63,818
IMPACT STRENGTH								
Isod Impact		ASTM D-256A	NO BREAK	NO BREAK	NO BREAK	NO BREAK	NO BREAK	NO BREAK
Tensile Impact	FT-LBS/IN ²	ASTM D-1822	715	255 - 540	400	653	750	1366
WEAR PROPERTIES								
Sand on Wheel	AVG WEIGHT LOSS	ASTM G-64	100	100 - 250	100	100	85	100
Abrasion Index	1018 STEEL=100	SAND SLURRY	10	10 - 22	10	10	8	12
COF THERMAL EXPANSION		ASTM D-496						
-30° To +60°C	IN/IN°C		2.1X10 ⁻⁴	1.8X10 ⁻⁴	2X10 ⁻⁴	2X10 ⁻⁴	1.6X10 ⁻⁴	2X10 ⁻⁴
-54° To +140°F	IN/IN°F		1.1X10 ⁻⁴	1X10 ⁻⁴	1.1X10 ⁻⁴	1.1X10 ⁻⁴	9X10 ⁻⁴	1.1X10 ⁻⁴
COF FRICTION		ASTM D-1894						
(Polished Steel)								
Static			.15 - .20	.15 - .20	.15 - .20	.015	.018	.20 - .25
Kinetic			.10 - .14	.10 - .14	.10 - .14	.08	.012	.10 - .15
HARDNESS	SHORE D	ASTM D-2240	68	64 - 70	68	68	70	68
ELECTRICAL PROPERTIES								
Static Decay Time	SECONDS	FTC-1010			< 0.1 SEC			
Dielectric Constant		ASTM D-150	2.30 - 2.35					
Dissipation Factor		ASTM D-150	< 5X10 ⁻³					
Surface Resistivity	OHMS	ASTM D-257	10 ¹⁷	10 ¹⁷	10 ⁵ - 10 ⁹	10 ⁵ - 10 ⁹	10 ¹⁷	10 ¹⁷
Volume Resistivity	OHMS-CM	ASTM D-257	10 ¹⁷	10 ¹⁷	10 ⁵ - 10 ⁹	10 ⁵ - 10 ⁹	10 ¹⁷	10 ¹⁷
FDA STANDARDS			YES	NO	NO	NO	NO	YES
TEMPERATURE RANGE		ASTM D-648						
MAXIMUM***	°F		180	180	180	180	220	180
CONSTANT	°F		200	200	200	200	240	200
INTERMITTENT	°F		N/A	N/A	N/A	N/A	N/A	N/A
MINIMUM	°F							

* Values are averages and not specifications.

** ASTM test methods are under current procedures.

*** Maximum operating temperatures may reach 250°F (121°C) under no load conditions for steam cleaning purposes.

2710 American Way, Fort Wayne, IN 46809
Phone: 1.219.479.4100

EXHIBIT B

BEST AVAILABLE COPY

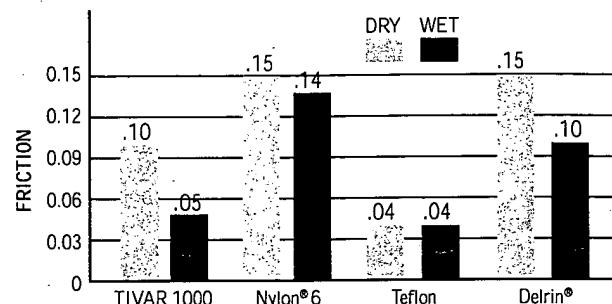


Material Selection

TIVAR UHMW Product Specifications

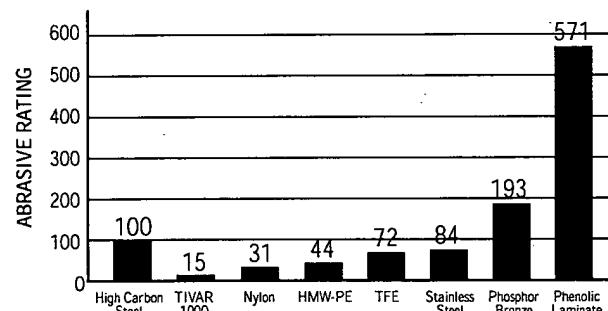
TIVAR CleanStat	TIVAR EXP	TIVAR 1000 PolySteel	TIVAR UV Resistant	TIVAR DS
0.94	0.95	1.45	0.93	0.93
3075	2700	2334	3000	3205
5163	5280	2755	4000	5990
200	300	125	140	400
118,900	101,900	N/A	156,900	154,900
110,230	85,000	108,750	100,000	92,390
NO BREAK				
702	343	250	400	1200
130	91	240	100	90
N/A	9	N/A	10	9
2×10^{-4}	1.6×10^{-4}	1.8×10^{-4}	2×10^{-4}	2×10^{-4}
1.1×10^{-4}	$.9 \times 10^{-4}$	1×10^{-4}	1.1×10^{-4}	1.1×10^{-4}
0.15	20	20	15-20	0.18
0.12	.17	.14	.10-.14	0.12
68	70	64	68	68
			< 0.1 SEC	
10^7-10^{10}	10^{17}	10^{17}	10^5-10^9	10^{15}
10^7-10^{10}	10^{17}	10^{17}	10^5-10^9	10^{15}
YES	NO	NO	NO	NO
180	180	180	180	180
200	250	200	200	200
N/A	N/A	N/A	N/A	N/A

Comparison of Dynamic Coefficient of Friction on Polished Steel



Abrasion Wear Resistance

Sand Slurry Test: Each material was rotated 24 hours @ 1750 r.p.m. with 50/50 sand/water slurry. Carbon steel = abrasive rating of 100. Weight loss for each material is relative to 100. The lower the figure, the better the abrasion resistance.



2710 American Way, Fort Wayne, IN 46809
 Phone: 1.219.479.4100, Toll Free: 1.800.628.7264
 (US), Fax: 1.219.478.1074
 ©2001 Poly Hi Solidur, Inc

BEST AVAILABLE COPY